

## ABSTRACT

An array directivity switching determining section 114 stores reception quality information outputted from a separating section 113, determines  
5 whether to change a directivity or beam width of transmission array antenna based on reception quality information, and outputs an information to indicate either to change the directivity or beam width of transmission array antenna to an array  
10 directivity switching controlling section 115 in accordance with the determination result. When an information to change the directivity or beam width of transmission array antenna is output from the array directivity switching determining section 114,  
15 the array directivity switching controlling section 115 calculates the weight to be transmitted at each antenna based on arrival directivity information outputted from a reception array directivity controlling section 110, outputs the weight to the  
20 reception array directivity controlling section 110, and outputs an information to change the directivity or beam width of transmission array antenna.